

A RECORD OF *ULOMA CULINARIS* (LINNAEUS)
(COL.: TENEBRIONIDAE) FROM THE BRITISH ISLES,
WITH A DISCUSSION OF ITS EUROPEAN BIOLOGY

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Abstract

A second British record of the saproxylic darkling beetle *Utloma culinaris* (L.) is reported, from the Forest of Dean, Gloucestershire. Its status and possible origins in Britain are discussed and a summary of published information on the biology, behaviour and distribution of the species in continental Europe is provided.

Introduction

Utloma culinaris (L.) (Tenebrionidae: Ulominae) was brought forward as British by Hodge (1985) based on a series of specimens, now in the Booth Museum, Brighton, taken at 'Bushey Hall' in 1950 by G. B. Alexander. Two of these specimens, on a single card, were kindly presented by P. J. Hodge and G. Legg to the British Isles collection of the Natural History Museum, London (BMNH). These bear the following data (four labels): 'Bushey Hall, 20/7/[19]50' 'From G. Legg, Booth Museum, Brighton. i/1982' 'Utloma culinaris (L.) M.J.D. Brendell det. 1982', 'BMNH(E) 2001-237, P J Hodge'. Other specimens from this series, still in Brighton, carry the additional data "in rotten wood" (Hodge & Jones, 1995). The locality appears to refer to Bushey Hall in Hertfordshire (TQ19, VC20), a large house later converted into a hydropathic spa (Bartholemew, 1904) close to the town of Bushey near Watford. This locality is alternatively spelt 'Bushy' (e.g. in Hodge *loc.cit.*, Hodge & Jones *loc.cit.*) but on the label on the BMNH specimen it is spelt 'Bushey'.

Hodge urges caution in regarding the species as British, very reasonably due to the scant material. Hodge and Jones (*loc.cit.*) echo this caution ('*status requires confirmation*'). Alexander (2002) describes it as '*extinct or vagrant?*'. Apart from the three references above, all referring to the same specimens, the species is not mentioned in the British literature. No other specimens are known from Britain. It is absent from all 18th, 19th and 20th century collections, and all collections of imported and vagrant coleoptera held at the BMNH, London and the Hope Entomological Collections, Oxford.

In September 2002, the collection of the late D. M. Womersley, of Manchester, was presented to the Natural History Museum, London, by his daughter Sue. When unpacking this interesting collection of 835 British Coleoptera, Darren J. Mann and myself were astonished to find a further two English examples of *Utloma culinaris* standing among undetermined material collected in the 1970s. The specimens, 1 ♂, 1 ♀, have the following data: ♂; "674, Tbe6, Aylford [sic], Forest of Dean, 30/5/73", ♀; "675, Tbe6, Ayleford, F. of Dean, 30/5/73", hand-written on a card label under the specimen using ballpoint pen. '674' and '675' are apparently registration numbers; unfortunately the collector's notebooks have not been found. The meaning of 'Tbe6'

is also unknown, though it may refer to a 'tube number 6' in which the specimens from the day's collecting were stored prior to setting. The labels are apparently temporary, hand-written in ballpoint on low quality card, which is characteristic of all Womersley's unnamed material; his named material is remounted and neatly re-labelled on card, using permanent ink, with determination labels attached, and stood above the name in his storeboxes. His collection is entirely of British origin, so confusion with continental material prior to labelling can effectively be ruled out. The data on the *Uloma* specimens is interpreted as referring to the village of Ayleford, Forest of Dean, West Gloucestershire (SO6608, VC34). These examples double the number of known British records of the species. The specimens now stand in the British Isles Collection, The Natural History Museum (BMNH), London.

Biology and European Distribution

The genus *Uloma* is large, with more than 100 described species worldwide. Of these, two reach northern Europe, the other being *U. rufa* (Pill. et Mitt.). *U. culinaris* is widespread across the Western Palearctic, including Iran, Sweden, Daghestan, the Caucasus, France, Italy, Germany, Corsica and Sicily (data from the collections of The Natural History Museum, London). A brief scan of the literature adds Greece (Scupola, 1998), Latvia (Telnov, 1997), Slovakia (Jaszay, 2001), European Russia (Nikitsky *et al.*, 1996) and the Ukraine (Nadvornaya & Nadvornyy, 1991), and it has recently been discovered new for Norway (Ottesen & Hansen, 1984). In spite of its specific name, '*culinaris*' (of kitchens), there appears to be no record of it occurring in synanthropic situations (although many of its relatives do). It is a species of woodland. Nikitsky *et al* (*loc.cit.*) give an account of its biology in the Moscow district, Russia, translated as follows:- "[*in moist brownish or brownish-white rotten wood of fallen trunks or boles, usually of pine, more rarely birch, usually lying in the open. Adults usually active May/June-August. Life cycle at least 2 years, overwintering as adult or larva. Pupates in wood*]". A detailed study of its biology in the Ukraine was made by Nadvornaya & Nadvornyy (*loc. cit.*). They examined over 600 dead trunks in mixed and broadleaved forests, and noted that the beetle was generally found in wood of birch *Betula*, lime *Tilia*, maple *Acer*, poplar *Populus* and 'false acacia', that it was rare in oak *Quercus*, and that it was 'not found' in hornbeam *Carpinus* and 'forest pear' (? *Pyrus* sp.). They do not appear to have investigated coniferous wood, although both Kaszab (1969) and Nikitsky *et al.* (*loc. cit.*) note an association with conifers. It seems likely that the wood utilised reflects availability rather than strong taxonomic preferences, especially as wood in later stages of decay is believed to be quite similar in nature irrespective of species. Nadvornaya & Nadvornyy (*loc. cit.*) observe that adult *Uloma* first colonise trunks that have been dead five to six years, where "*the bark is coming off, the phloem and cambium have decomposed, and the sapwood and heartwood are starting to decompose*". Wetter trunks are favoured for colonisation, and the beetles are absent in standing trunks, or occur only in the moister basal 30-50cm. They also occupy subterranean root systems, to

a depth of 50cm below ground. Nadvornaya & Nadvornyy (*loc. cit.*) found that the incidence of *Uloma* in the Ukraine varies from 2%-23% of trunks examined, based on region.

Nadvornaya & Nadvornyy (*loc. cit.*) observe that adults are strongly lucifugous, but fly well at night; flight was observed (in the lab.) between 22.00hrs-04.00hrs. During the day, beetles that have not found suitable habitat shelter under bark. Adults live up to two years. Larvae occupy the same trunks as adults, and development takes 10-11 months, mature larvae reaching 18mm. Larvae migrate up and down seasonal moisture and temperature gradients within the trunk, occurring in the warm upper area in spring, in the moist lower area in summer, and overwintering in the centre. Because adults are long-lived, and have a low rate of reproduction, adults and larvae of various sizes are present continuously. Larvae and adults apparently feed on fungal mycelia within the decaying wood.

British Status

At present *Uloma culinaris* is known from only two series of British specimens, both taken in forested areas of central England in the second half of the 20th century. Although Britain falls within the likely geographical range of the beetle, it seems unlikely that such an unmistakable species, more than 10mm long, could have been overlooked by British coleopterists for so long. The possibility that specimens are descended from vagrants or imports should be considered. In the early 20th Century large quantities of wood, especially coniferous softwoods, were imported from continental Europe into Britain, especially for use as pit props in mining areas. Hallett (1923) records the collection of numerous non-British beetles in pine 'pit wood' imported from France to Cardiff, and discusses the importation of such wood to other 'colliery districts' including the Forest of Dean, which was a major mining area. Much of this wood would have still have had the bark attached, and some was apparently too far decayed to be used for propping shafts, and was thus sold off for firewood (Hallett, *loc. cit.*). Such wood has been implicated in the introduction to the British Isles of a number of Coleoptera of central European origin, including *Corticeus fraxini* (Kugel.) (Tenebrionidae) and *Aulonium ruficorne* (Oliv.) (Colydiidae), both of which were first recorded in pine wood in the Forest of Dean (Beare & Donisthorpe, 1922), and in both cases their introduction with pit props has subsequently been suggested (Hallett, *loc. cit.*, Marshall, 1978). As well as France, pit wood was imported from Germany and Poland (P.M. Hammond pers. comm.), from the Baltic States (Balfour-Browne et al, 1954) and doubtless from elsewhere. Later in the 20th Century, home-grown softwoods replaced imported wood, partly as a result of disruption of supply during the two world wars (J. Cooter pers. comm.). However, it remains quite possible that English examples of *Uloma* are descended from populations imported to colliery districts with continental softwood timber.

Whether *Uloma culinaris* still persists in the Forest of Dean or elsewhere in Britain requires confirmation. Of the two other beetles mentioned above, one,

Corticeus fraxini has become widespread, but the other, *Aulonium ruficorne* appears to have much declined or disappeared. *Uloma* is a difficult species to find over much of its range, and the combination of elusive habits, rarity and its presence in comparatively under-worked parts of the country may have contributed to a lack of records. Nadvornaya & Nadvornyy's (*loc.cit.*) observation that, in some regions of the Ukraine, it occurred in only 2% of tree trunks examined, and its recent addition to the Norway list (Ottesen & Hansen *loc.cit.*), especially considering that it has long been known from Sweden (BMNH Collection), also suggests a species that is not likely to be encountered casually. Furthermore, the breaking up of moist, white-rotten trunks is not an especially productive collecting technique, usually revealing only lucanid larvae, Scaphidiinae and, in winter, hibernating Carabidae and Silphidae; many collectors abandon this destructive, laborious and unproductive method of searching early on in their careers. Flight interception trapping may catch night-flying adults, but the beetles may not frequently leave the substrate in which they are breeding, possibly only to disperse to new habitat when a log becomes unsuitable. The record from Bushey Hall is perhaps even more surprising, though there are pockets of old woodland in the area that may repay renewed investigation.

Identification

Uloma culinaris (Plate N) is unmistakable in the context of the British Fauna, (although it is close to several non-British species, notably the palaeartic *U. rufa*). The beetles are 10-11.5mm, strongly cylindrical, shining ferruginous brown. Hodge and Jones (*l.c.*) compare *U. culinaris* to a large, pale-coloured *Alphitobius*, and indeed it will key to *Alphitobius* in the key to genera in Brendell (1975). The following couplets replace couplet 19 (p.12) of Brendell (*loc. cit.*).

Supplement to the Generic key to British Tenebrionidae

- 19** Pronotum transverse, about one and a half times as wide as long and measuring more than 2mm across**19a**
- Pronotum sub-quadrate to slightly transverse and measuring distinctly less than 2mm across(leading to *Tribolium* Macl. and *Guatocerus* Thunb.).
- 19a** 9-12mm. Shining ferruginous orange-brown***Uloma* Latreille**
- 4.5-6.75mm. Shining piceous brown to black***Alphitobius* Stephens**



Plate N. Adults of *Uloma culinaris* (L.) (Tenebrionidae) from the UK. **1**, ♂, Bushey Hall, 20.vii.1950, G. B. Alexander. **2**, ♀, Ayleford, Forest of Dean, 30.v.1973, D. M. Womersley. Actual lengths 10mm (♂) & 10.8mm (♀). Specimens from British Isles Collection (BMNH/NHM). Photos by Harry Taylor (NHM Photo Unit).

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References

- Alexander, K. N. A., 2002. *The invertebrates of living and decaying timber in Britain and Ireland: a provisional annotated checklist*. English Nature Research Reports, number 467. 142pp.
- Balfour-Browne, J., Cooper, B. A., Duffy, E. A. J. & Stainforth, T., 1954. Rearing; introductory notes. In: *A Coleopterists Handbook*. (eds. G.B. Walsh & J. R. Dibb). Amateur Entomologist's Society. 120pp.
- Bartholemew, J. G., 1904. *The survey gazetteer of the British Isles, compiled from the 1901 census and the latest official returns*, George Newnes Ltd., London. 928pp.
- Brendell, M. J. D., 1975. Tenebrionidac. *Handbooks for the Identification of British Insects* **5** (10): 22pp.
- Hallett, H. M., 1923. Beetles in imported timber. *Entomologist's Mon. Mag.* **59**:13-14.

- Hodge, P. J. 1985., 1984 Annual Exhibition- Coleoptera. *Proc. Trans. Br. ent. Nat. Hist. Soc.* **18**:3.
- Hodge, P. J. and Jones. R. A., 1995. *New British beetles: species not in Joy's Practical Handbook*. British Entomological and Natural History Society, 175pp.
- Beare, T. Hudson- and Donisthorpe, H. 1922. *Aulonium ruficorne* Ol. and *Hypophloeus fraxini* Kug., two species of Coleoptera new to the British List. *Entomologist's Mon. Mag.* **58**:193.
- Jaszay, T., 2001. *Coleoptera of the National Park Poloniny*. Statna ochrana prirody SR banska bystrica sprava narodneho parku Poloniny snina. 234pp.
- Kaszab, Z., 1969. Tenebrionidae: In: Freude, H., Harde, K.W. and Lohse, G.A. *Die Käfer Mitteleuropas* **8**: 213-264.
- Marshall, J. E., 1978 The larva of *Aulonium trisulcum* (Fourcroy) (Coleoptera: Colydiidae) and its association with elm bark beetles (*Scolytus* spp.). *Entomologist's Gazette*, **29**:59-69.
- Nadvornaya, L. S. & Nadvornyy, V. G., 1992, Biology of the Darkling beetles *Bolitophagus reticulatus* L. and *Uloma culinaris* L. (Coleoptera: Tenebrionidae) in the Forest Steppe zone of the Ukraine (originally published in Russian, Entomogicheskoye Obozreniye 1991:2), *Entomological Review* **71**:35-40.
- Nikitsky, N.B., Osipov, I. N., Chemeris, M.V., Semenov, V. B., Gusakov, A. A., 1996. *The beetles of Prioksko-Terrny Biosphere Reserve- Xylobiontes, Mycetobiontes and Scarabaeidae (with the review of the Moscow Region fauna of these groups)*. Arch. Zool. Mus. Moscow. 1-196.
- Ottesen, P. S. & Hansen, L. O., 1984. *Uloma culinaris* (L.) (Col., Tenebrionidae) new to Norway. *Fauna Norv. Ser. B* 31: 106-107.
- Scupola, A., 1998 Contribution to the knowledge of the Greek Tenebrionidae fauna. I. (Coleoptera Tenebrionidae). *Bollettino-della-Societa-Entomologica-Italiana*. **130**: 65-68.
- Telnov, D., Barsevskis, A., Savich, F., Kovalevsky, F., Berdnikov, S., Doronin, M., Cibulskis, R. & Ratniece, D. 1997. The updated list of Latvian Beetles: Tenebrionidae. *Mitteilungen des Internationalen Entomologischen Vereins e.V., ISSN 1019-2808. Supplement No. 5: the 5th May, 1997: pp. 1-140.*

***Yponomeuta rorrella* (Hb.) (Lep.: Yponomeutidae) and *Syncopacma larseniella* (Gozman) (Lep.: Gelechiidae) recorded new to Monmouthshire**

On 15 July 2002, to assist with a survey being undertaken there, a number of moth recorders visited Hendre Woods, an ancient woodland site to the west of Monmouth. After an enjoyable evening of moth-trapping, I returned home with two moths that required further investigation. With the assistance of the long-awaited *Moths and Butterflies of Great Britain and Ireland* volume 4 (part 2) one was easily identified as *Syncopacma larseniella*, and the other proved to be *Yponomeuta rorrella*. The latter specimen was passed on to David Slade at the National Museum of Wales to corroborate this identification. These species are not listed in G. A. Neil Horton's 1994 checklist for Vice County 35 (*Monmouthshire Lepidoptera*. Comma International Biological Systems). Martin Anthony, the current county recorder, has confirmed that he has no previous records of them, so these are presumably new for Monmouthshire.— MARTIN J. WHITE, 58 Victoria Quay, Maritime Quarter, Swansea, SA1 3XG.